17662

Nabil Fayoumi

02/20/03 09:58 AM

To: sdsmit cc: rswill1, pbarrett, Sandra.Bron, Kevin_de_la_Bruere, mhenry
Subject: Review Comments/Notice of Deficiency (NOD) for the Groundwater Migration Control System - Prefinal Design Document, Sauget Area 2 Site - St. Clair County, Illinois

Dear Mr. Smith:

The United States Environmental Protection Agency (U. S. EPA) received the Prefinal Design Document for the Groundwater Migration Control System for the Sauget Area 2 Site on January 21 and 31, 2003.

The attached file contains the U.S. EPA's comments/notice of deficiency (NOD) for the Prefinal Design Document. I also attached the Conditional Approval Letter of the RD/RA Workplan that was mailed to you on February 4, 2003. Please submit your responses to the Prefinal Design Document NOD and the Conditional Approval Letter of the RD/RA Workplan within 14 days of receipt of this e-mail. If there are any questions, please contact me at 312-886-6840.

Sincerely,

Nabil Fayoumi
Remedial Project Manager
Superfund Division

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FINAL-TECHNICAL MEMORANDUM SAUGE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

February 4, 2003

REPLY TO THE ATTENTION OF
(SR-6J)

Mr. Steven D. Smith
Solutia, Inc.
P.O. Box 66760
St. Louis, Missouri 63166-6760

RE: Conditional Approval of Remedial Design/Remedial Action (RD/RA) Workplan (excluding the project schedule) for the Ground Water Migration Control System, Sauget Area 2 Site – St. Clair County, Illinois

The United States Environmental Protection Agency (U. S. EPA) has completed the review of the RD/RA Workplan which was submitted by Solutia on December 19, 2002. This Conditional Approval does not cover RA/RD's schedule. The Unilateral Administrative Order (UAO) requires the completion of the groundwater migration control system within 8 months from the effective data of the Order. This timeframe was agreed to by U. S. EPA, IEPA and Solutia at a meeting last year. The effective date of the UAO is 11/15/02 which means the project must be completed by 7/15/03. However, initiation of construction covered in the schedule provided in Figure 1 of the RD/RA Workplan is not scheduled until 6/17/03 and the barrier wall will not be complete until 2/2/04.

The U.S. EPA approves the above referenced document (excluding the schedule) in anticipation that the following comments will be addressed as part of the Prefinal Design document:

- The completion of the project should not be contingent on the ability of Solutia to obtain a permit to discharge the extracted groundwater to the American Bottom POTW. Alternative disposal options were suggested and should have been investigated concurrently during the past year as Solutia attempts to obtain a discharge permit from POTW.

- Section 3 (Remedial Design) states that the volume of spoils and waste from drill cuttings potentially generated during the installation of the jet grout wall could be "up to 40,000 cubic yards". This seems like a large volume given that one of the chief advantages of the jet grout wall installation is the generation of little or no spoil. The Prefinal Design document should include the assumption behind this.

- Section 2 describes the conceptual design and construction of the barrier wall. The plan states that several design tasks are ongoing including mapping the bedrock surface,

evaluating compatibility of grout mix with onsite groundwater, and constructing a test cell to assess jet grout geometry and installation methods. In addition, a groundwater extraction system consisting of three partially-penetrating wells is planned. It is important that these tasks be described in detail in the Prefinal Design document so that the various approaches may be properly evaluated and refined as necessary.

Section 2 also summarizes the proposed groundwater monitoring program and the sediment/surface water monitoring program. The former states that four clusters of three monitoring wells will be constructed for water quality monitoring and that four sets of piezometer pairs will be constructed to monitor water levels on either side of the barrier wall. The locations of these monitoring points should be presented on a figure.

Regarding the sediment/surface water monitoring program, the workplan states that an Apparent Effects Threshold and Toxic Units Approach will be used to establish protective constituent concentrations for two media. The used methodologies along with any technical assumptions made should be clearly described in the Prefinal Design document.

- Section 2.2.11, Page 2-1, the Prefinal Design submittal, referenced under Section 3.3, must include design assumptions and parameters for the single panel barrier wall.

- Section 2.2.1.1, Page 2-2, Second Paragraph, the Upper Hydrogeologic Unit is described as representing 1 percent of the total flux discharging to the river, based on groundwater modeling performed during the Focused Feasibility Study ("FFS"). The Prefinal Design document must include specific references to the groundwater modeling in the FFS.

Last Paragraph, the Prefinal Design document must include a technical explanation for how "minimal gaps" and "minor discontinuities" will require higher pumping rates to equalize groundwater levels on the upgradient and downgradient sides of the barrier. It would appear that gaps and discontinuities would tend to equalize groundwater levels on the upgradient and downgradient sides. Further, since the pumping rate will be adjusted to maintain equal levels upgradient and downgradient, as opposed to creating a zone of depression, it would appear the pumping rate adjustment cannot be used to compensate for gaps or discontinuities in the wall.

- Section 2.2.2.2, Pages 2-4, 2-5, First Bullet, the Prefinal Design document must explain the rationale for not screening the piezometers across the Shallow Hydrogeologic Unit, given that the wall will not extend into the Shallow Hydrogeologic Unit. The piezometers should measure the performance of the wall design. Additionally, details on how the pump rate will be primarily controlled by the river level must be included in the Prefinal Design document, subject to approval. Finally, the water level differentials need to be the "same", as written in the FFS (p.1-27), not "minimized".

- Section 2.3, Page 2-6, a brief discussion should be provided on the role of the U. S. EPA, IEPA, and the oversight contractor.

- Section 3.5.1, Page 3-4, add a bullet item for "summary of inspection activities including the pre-construction meeting, regular progress meetings, pre-final and final inspections, etc."

The CQAP needs to specify procedures that will be followed for notification/approval of project modifications, including a description of minor, significant changes during construction, and notifications/review/approval process for changes during construction.

- Section 4, the remedial action described in this section does not address the construction of the "test cell" mentioned in Section 2. Also, the schedule provided as Figure 1 does not include any information regarding test cell construction. The construction and evaluation of the test cell is a key component of the project and should be detailed in a support technical memorandum prior to the Prefinal Design document review and approval.

- Section 4.2, Page 4-2, add a section for regular progress meetings, between the pre-construction inspection, and the prefinal inspection.

If you have any questions regarding this letter, please do not hesitate to contact me at 312/886-6840.

Sincerely,

Nabil Fayoumi
Remedial Project Manager

cc: Thomas Martin, USEPA
Peter Barrett, CH2M HILL
Sandra Bron, IEPA
Kevin de la Bruere, USFWS
Michael Henry, IDNR

bcc: File Room